Science Curriculum Fieldwork

For this project you will design and conduct a fieldwork for three consecutive sessions. Like the fieldworks you have done so far, your purpose is to engage your participant/learner in a topic and deepen their connections with the topic. Your goal is to provide support that will enable them to raise more questions and solidify their interest in the topic you have chosen. *It is NOT to bring them to a specific statement or end-point that you have in mind.*

This project has five parts. A draft proposal, revised/final proposal and conducting and writing up three fieldwork sessions. You will work with one partner from this class so that you have someone with whom to discuss the details of what happens. As we have repeatedly experienced in class, two people notice more than one person does alone. You and your partner will document and discuss what happens during your fieldwork session, what led to what, what you might try next time, etc.

You and your partner will **work with at least 2 and no more than 5 students in grades K-8.** If you do not have access to students, try to find a partner who does. Decide who will facilitate and who will observe the first two sessions, it is important for each of you to have a chance in each role. For the final session one of you may facilitate while the other observes, or you may decide to animate together. Once you have selected a topic, you can work out between the two of you how you want to facilitate the sessions.

Each session must be scheduled so that you have time immediately after to discuss to discuss together what each of you noticed/thinks happened during the session. This is critical to the design and implementation of your fieldwork. Your description of this must be included within your fieldwork proposal (see instructions below). You will also need to schedule your sessions with enough time to write, submit and receive feedback on your reports before conducting the next session.

You and your partner MUST be very familiar with, and interested in, the topic you choose. In order to understand what questions to ask or activities to suggest to your learners, you will have to understand what ideas they may be grappling with. This **requires** that you understand the content area you choose to explore. Also, pick a topic that interests you. If you do not find worms interesting and compelling, then they would not be a good choice for you. Once you and your partner select a topic, **spend some time messing about with the materials you plan to use. See what questions arise for you, and test out how the materials respond.** If you choose bubbles, practice blowing bubbles with different implements and under various situations, if you choose circuits or electricity play around with batteries and bulbs. It is also a good idea to look through related resources to be sure you feel comfortable with the content. You will find activity packets and links to many science resources in the resource section of the class site. It is very likely that the depth and breadth of your understanding of the content will grow with each session you conduct, as you experience how learners engage with the topic.

As in all of the fieldworks you have participated in and animated/facilitated this fall, two things happen at once: On the one hand, we try to figure out how people are going about the activities, what they are understanding, how they feel about what they are doing, what they make of it; on the other hand, this is all in the service of broadening and deepening their understanding. **Remember, your purpose is to deepen the person's connections with the topic you choose, for them to raise more questions and solidify their interest, it is NOT to bring them to a specific statement or a specific end point you have in mind.**

Since the learner is to make his or her own sense of what you offer, there must be the possibility for the learner to learn what s/he needs by referring back to what is before her or him. In the case of the poem, the poem is there to refer back to each time you have a new idea about it – where in the poem is there "evidence" to support their idea? Is it there? With eggs, there are actual eggs to touch, organize, observe, crack, etc. to both stimulate new ideas, and to provide concrete evidence for others. As the facilitator you need to be able to ask your participants to show you what they mean using the materials you provide. The topic and materials you choose must provide a similar build-in testing-ground. You will use what the students say and do to inform your own approach and decision making.

Writing your Proposal: Though each member of the team will write and submit fieldwork reports for each session, you only need to submit one draft and one proposal per team. An initial brainstorm of your proposal is due so I can give you some feedback before your final draft is due**. It is not be possible to plan ahead of time exactly what will happen in each session!** This is, of course, because what you do in any one session will depend on how your learners respond, and on what has happened before. You will use what the students say and do to inform your own approach and decision making. The best you can do is to prepare for possible options. Your proposal is designed to help you think about the possible options you could use to engage and keep your learner engaged.

You must include descriptions of the following in the draft and in the final proposal.

1) Identify a topic and content area to conduct inquiry-based fieldwork with students based on WA State Science EALRs.
2) <u>Identify which Format Option you will choose</u>
    a) You and your partner will pick a topic that you wish to investigate for three sessions with the same group of learners; each session building off the session before. That means; you will conduct session one and document what your learners did. Session two will be designed by you and your partner only after you had conduct and review session one, and session three will be designed and implemented after you review what happened during session one and two.
    b) You and your partner will pick a topic that you wish to investigate in the same way with three different groups of learners. That means you would conduct the same field work with three different groups of students. You may choose to modify how your present the investigation to the second group based on the response you notice during your first session, and likewise for the third group.

3) <u>Describe how your situation will work</u>
    a) Age/grade of participants
    b) number of participants
    c) fieldwork location
    d) plan for how and when you will debrief with your partner

4) <u>Describe Materials/Activities in detail:</u>
    a) What materials and activities will you start with? Exactly what questions, and or activities will you use to start?
    b) How do you anticipate these activities progressing? Write out some scenarios of how you see the students ideas developing. Describe how you will respond if they develop in each of those several ways.

c) Write out some back-up plans in case the original starting point doesn't develop at all, or develops in another direction.

5) Explain your Approach: Try to describe how your approach has possibilities to connect with a learner's thoughts and interests in various different ways. Also try to ensure that there is good learning mileage in what you are undertaking together – that the person's ideas or understanding will develop in some way, within the topic you choose – even though ahead of time you are not sure exactly which ways it may go. The point is to understand the topic and the learners well enough to anticipate what they might do/say. Articulate how you will offer participants of differing knowledge and skill levels access to the materials/explorations. Articulate the ways in which you will follow, encourage, and expand your participants' understandings.

6) Double Check your Plan – be certain you address the following points within the description of your fieldwork.
   a) Have you planned a clear way to begin that involves the students' encounter with a material of your subject matter? Have you developed compelling questions that invite ALL of your learners to engage?
   b) Does the material embody the ideas/phenomenon you are trying to put students in contact with? (For example, eggs of different colors, sizes, textures, and shapes offer the opportunity to explore the biological factors such as fertilization, incubation, genetics, that influence such differences.)
   c) Does your proposed work allow room for the students to interact with the material/phenomenon and ask their own questions about it? (If you have planned all your questions to the students ahead of time like a questionnaire or worksheet, you are not allowing them room to go where the material takes them.)
   d) Is there a way for them to test out their ideas by working with the materials and each other? (For example, you could carefully examine and compare the eggs, crack them open to look at the structure inside and out to check out your ideas. Some of the students in the class had experience with chickens and eggs and could provide additional information from past experiences)
   e) Have you thought of some ways (questions, other materials) to keep them going if they get stuck or decide that they are finished?
   f) Is there some room for them to keep asking questions beyond the range of the time you will spend with them? Is the subject matter intriguing or engaging enough to stimulate thought beyond your session?

Science Curriculum Fieldwork Reports – Although you will be planning and working together, **you will each write your own field work report. You must both complete your fieldwork reports and receive feedback from me BEFORE you conduct your next fieldwork session!!!** You will need to submit your reports electronically. A tentative schedule is outlined on the syllabus, but since access to students may vary for each group, you will need to make a schedule with me to be sure that I can provide you feedback before you conduct your next session.

Guidelines for the reports:

1) It is fine to share notes taken during the session, but you are each writing up your own report you're your own perspective. I encourage you to share your reports with one another.
2) Protect the anonymity of your participants by using a pseudonym (initials are best). It is your job to follow the development of each learners' ideas during the session. It is OK to focus on just one or two learners for the session.

3) The report should include both what you are learning about the participants' learning, AND what you are learning about the facilitators role in doing this.

4) You need not try to write everything that happened. Focus on one or more specific events that stood out for you.

5) Keep track of who said what. While you do not need not transcribe the entire session, it is important to quote exact language that transpired when describing a particular event. Describe the event and write your thoughts and questions about it: what surprised you and how, what you thought worked well and less well, what decisions you make on the spot, what you don't understand about the learner's thoughts and how you might go about trying to understand them better.

6) Describe your sense of the materials and activities, and how what happened in this session influences your plan for the next session.

7) Include insights you gained in discussion with your partner after the session.

Science Curriculum Fieldwork Grading Rubric

The rubric below describes the grading criteria for this assignment as it supports course objectives.

A to A-	B+ to B-	C+ to C-	Incomplete/Unsatisfactory
Meets or exceeds outlined criteria. Work is handed in on time.	**Meets 80-89% of outlined criteria. May revise and resubmit work to receive a higher grade. Work is not always handed in on time.**	**Meets 70-79% of outlined criteria. May revise and resubmit work to receive a higher grade. Frequently misses deadlines.**	**Meets less than 70% of outlined criteria. Must revise and resubmit work to receive a grade.**
• Proposal indicates an understanding of: content area as outlined in the WA state EALRs, GLEs, • Report documents evidence of students' learning and includes reflection by teacher on how this learning informs teaching. • Creatively and thoughtfully develop, implement, and report on 3 fieldwork sessions according to specified timelines • Successfully collaborates on project development and implementation with partner and school or community • Reports indicate thoughtful reflection of teacher (self) and learner (student) participation and understandings in relation to learning targets outlined in WA state EALRs, GLEs • Reports reflect how learner participation and understandings are used to revise performance and goal setting for subsequent sessions • Reports document learner participation and illustrate connections to school and • Reports document how learners engage with subject matter and how they explain choices based on their understandings	• Proposal indicates partial understanding of: content area as outlined in the WA state EALRs, GLEs, • Report documents limited evidence of students' learning and includes minimal reflection by teacher on how this learning informs teaching. • Incomplete development, implementation, and reporting on 3 fieldwork sessions, and do not always meet specified timelines • Collaboration on project development and implementation with partner and school or community is limited or not well reported • Reports show limited reflection of teacher (self) and learner (student) participation and understandings in relation to learning targets outlined in WA state EALRs, GLEs • Reports sow some reflection on how learner participation and understandings are used to revise performance and goal setting for subsequent sessions • Reports sometimes document learner participation and illustrate connections to school and communities • Reports sometimes document how learners engage with subject matter and how they explain choices based on their understandings	• Project proposal indicates very limited understanding of: content area as outlined in the state frameworks, collaborative learning strategies, and assessment targets • Project implementation and reporting is inconsistent, rarely following specified timelines. • Project reflects problems with in the development and/or implementation and/or reporting on 3 session fieldwork. • Collaboration on project development and implementation with partner is problematic or missing • Reports indicate little reflection of teacher (self) and learner (student) participation and understandings • Reports show minimal or no documentation how learner participation and understandings can be or are used to revise performance and goal setting for subsequent sessions • Reports rarely or do not document learner participation and illustrate connections to school and communities • Reports show minimal documentation of how learners engage with subject matter and how they explain choices based on their understandings	• Project proposal indicates no understanding of: content area as outlined in the state frameworks, collaborative learning strategies, and assessment targets • Project implementation and reporting does not follow specified timelines • There is no collaboration on project development and implementation • Reports indicate no reflection of teacher (self) and learner (student) participation and understandings • Reports do not show how learner participation and understandings are used to revise performance and goal setting for subsequent sessions • Reports do not illustrate connections to school and communities • Reports do not document how learners engage with subject matter and how they explain choices based on their understandings